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EXAMINER	
SAWHNEY, VAIBHAV	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,039	MIAO, GEORGE J.	
	Examiner	Art Unit	
	VAIBHAV (MANU) SAWHNEY	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,14,19-21 and 23-25* is/are rejected.

7)☒ Claim(s) *10-13 and 15-18, 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the connection between the two switches in Fig. 13 to be able for one of the switches to control the other said switch, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 2, 3, 9, 16, and 18 are rejected on the ground of nonstatutory double patenting over claims 1, 4, 5, 6, 9, 12, 13, and 18 of U. S. Patent No. 7,133,646 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

This is a provisional obviousness-type double patenting rejection.

Present Application 10/667,039	Patent 7,133,646
Claim 1: A multiband MIMO-based dual-mode portable station of 3G W-CDMA and UWB communication receiver comprising: a MIMO-based dual-mode 3G W-CDMA and UWB filtering and multicarrier RF section; a 3G W-CDMA baseband processor; an UWB OFDM multiband baseband processor; a 3G W-CDMA and UWB OFDM multiband control processor; and a multiple antenna unit.	Claim 1: A multimode and multiband MIMO transceiver of W-CDMA, WLAN, and UWB communication comprising: a MIMO-based multimode and multiband RF unit including W-CDMA, WLAN and UWB connected to a **multiple antenna unit** in which includes N antennas, where N is an integer and greater than 1; said MIMO-based multimode and multiband RF unit connected to a WLAN and UWB OFDM processor in which coupled to a sharing memory bank, an interleaver, and **a W-CDMA, WLAN, and UWB control processor coupled to a coding processor; said MIMO-based multimode and multiband RF unit** connected to a W-CDMA Rake and baseband processor in which coupled to the sharing memory bank, the interleaver, and **the W-CDMA, WLAN, and UWB control processor**; said MIMO-based multimode and multiband RF unit connected to the sharing memory bank in which coupled to the WLAN and UWB OFDM processor, the **W-CDMA Rake and baseband processor, and the W-CDMA, WLAN, and UWB control processor**; said MIMO-

	based multimode and **multiband RF unit** connected to the W-CDMA, WLAN, and UWB control processor in which coupled to the sharing memory bank, the W-CDMA Rake and baseband processor, the WLAN and **UWB OFDM processor**, the interleaver, and the coding processor; the interleaver coupled to the W-CDMA, WLAN, and UWB control processor, the W-CDMA Rake and baseband processor, the WLAN and UWB OFDM processor, and the coding processor; and the coding processor coupled to the interleaver and the W-CDMA, WLAN, and UWB control processor.
Claim 2: The multiband MIMO-based dual-mode portable station of 3G W-CDMA and UWB communication receiver of claim 1 wherein said MIMO-based dual-mode 3G W-CDMA and UWB filtering and multicarrier RF section includes two-LNA, two-AGC, two analog bandpass filters, two dual-switch, a 3G W-CDMA down converter and demodulation, an UWB multiband down converter and demodulation, and a A/D unit.	Claim 4: The multimode and multiband MIMO transceiver of **W-CDMA, WLAN, and UWB communication of claim 1, wherein the MIMO-based multimode and multiband RF unit** further comprises **N analog bandpass filters**, **N LNA, N AGC**, a sum over block, **a selection switch, a W-CDMA down converter and demodulation, a WLAN down converter and demodulation, a multiband UWB down converter and demodulation**, and a tri-mode **A/D converter unit**, where N is an integer and greater than 1.

Claim 3: The multiband MIMO-based dual-mode portable station of 3G W-CDMA and UWB communication receiver of claim 2 wherein said two dual-switch are to provide information from the two analog bandpass filters either to the 3G W-CDMA down converter and demodulation or to the UWB multiband down converter and demodulation.	Claim 13: The **multimode and multiband MIMO-based W-CDMA, WLAN, and UWB communication receiver** of claim 12, wherein the multimode and multiband W-CDMA, WLAN and UWB RF unit further comprises: four analog signal processing branches, each of said analog signal processing branches including an analog bandpass filter coupled to a LNA followed by a AGC, which are summed by a sum over a block followed by **a selection switch**; **said selection switch connects to a W-CDMA down converter and demodulation during a W-CDMA mode or to a WLAN down converter and demodulation during a WLAN mode or to an UWB down converter and demodulation during UWB mode**; and said W-CDMA down converter and demodulation, said WLAN down converter and demodulation, and said UWB down converter and demodulation in parallel coupled to a tri-mode A/D converter unit.
Claim 9: The multiband MIMO-based dual-mode portable station of 3G W-CDMA and UWB communication receiver of claim 2 wherein said A/D unit has two switches and eight A/D converters.	Claim 5: The **multimode and multiband MIMO transceiver of W-CDMA, WLAN, and UWB communication** of claim 4, wherein the tri-mode **A/D converter unit further comprises: two selection switches** with three inputs and one output; each of said **two selection switches** connects one input of W-CDMA, WLAN or UWB signals; **eight M A/D converters** with uniform sampling rate and resolution, where M is a integer and greater than 1; two of said M A/D converters for W-CDMA mode or WLAN mode; and said M A/D converters for UWB mode.

Claim 16: The multiband MIMO-based dual-mode portable station of 3G W-CDMA and UWB communication receiver of claim 1 wherein said UWB OFDM multiband baseband processor includes a combination section of a digital receiver filter unit, a multiband dispreading unit, and a TEQ unit, four S/P, four guard removing, four combination of FFT and FEQ, five P/S, and a despreading, deinterleaver and decoding unit.	Claim 1: A multimode and multiband MIMO transceiver of W-CDMA, WLAN, and UWB communication comprising: a MIMO-based multimode and multiband RF unit including W-CDMA, WLAN and UWB connected to a multiple antenna unit in which includes N antennas, where N is an integer and greater than 1; said MIMO-based multimode and multiband RF unit connected to a WLAN and UWB OFDM processor in which coupled to a sharing memory bank, **an interleaver**, and a W-CDMA, WLAN, and UWB control processor coupled to a coding processor; said MIMO-based multimode and multiband RF unit connected to a W-CDMA Rake and baseband processor in which coupled to the sharing memory bank, the **interleaver**, and the W-CDMA, WLAN, and UWB control processor; said MIMO-based multimode and multiband RF unit connected to the sharing memory bank in which coupled to the WLAN and UWB OFDM processor, the W-CDMA Rake and baseband processor, and the W-CDMA, WLAN, and UWB control processor; said MIMO-based multimode and multiband RF unit connected to the W-CDMA, WLAN, and UWB control processor in which coupled to the sharing memory bank, the W-CDMA Rake and baseband processor, the WLAN and UWB OFDM processor, the interleaver, and the coding processor; the interleaver coupled to the W-CDMA, WLAN, and UWB control processor, the W-CDMA Rake and baseband processor, the WLAN and UWB OFDM processor, and the coding processor; and the coding processor coupled to the interleaver and the W-CDMA, WLAN, and UWB control processor. Claim 6: The multimode and multiband

	MIMO transceiver of W-CDMA, WLAN, and UWB communication of claim 1, wherein the WLAN and **UWB OFDM processor** further comprises: a WLAN digital decimation channel select filter unit; a controllable selection switch with connecting either a WLAN input or an UWB input and producing a serial output; a **dual-mode WLAN and UWB serial-to-parallel (S/P) and guard removing**; **a dual-mode WLAN and UWB FFT and frequency-domain equalizer (FEQ); a dual-mode parallel-to-serial (P/S) with either M inputs or N inputs in parallel and one serial output**, where M and N are an integer and greater than 1; a multiband UWB **digital receiver filter**, **despreading and time-domain equalizer (TEQ) unit; Q S/P and guard removing, where Q is an integer and greater than 1; Q FFT and FEQ; Q P/S with N inputs in parallel and one serial output**, where N is an integer and greater than 1; **a P/S with P inputs in parallel and one serial output**, where O is an integer and greater than 1; **a spreader**; and a user key sequence generator. Claim 18: The article of claim 16 further storing instructions that cause a processor-based system during a WLAN mode to: set WLAN parameters for bandpass filters, LNA and AGC; control a switch to connect with a WLAN down converter and demodulation; select two A/D converters for WLAN signals; and set WLAN parameters for a FFT and FEQ, the tri-mode interleaver and the tri-mode **decoding.**
Claim 18: The multiband MIMO-based dual-mode portable station of 3G W-CDMA and UWB communication receiver of claim 16 wherein the each of four combination of FFT and FEQ includes	Claim 9: The **multimode and multiband MIMO transceiver of W-CDMA, WLAN, and UWB communication** of claim 7, wherein said **dual-mode WLAN and UWB FFT and FEQ uses the dual-mode FFT**

1024-point FFT and 500 N-tap equalizers, 500 decision detector units, and an adaptive algorithm.	**with M inputs and M outputs in parallel, M equalizers, M decision detectors, M subtracts, and the adaptive algorithm** during WLAN operation, where M is an integer and greater than 1.

Application 10/667,039 is a broader version of the patent 7,133,646, as the patent 7,133,646 has many more elements in each claim making them narrower.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear how the dual-switches are connected and how one of the switches can control the other switch without being connected with each other. Appropriate action is required.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The statement "...one down converter includes...four down converters" is not enabling. Appropriate action is required.

Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The statement "...four multiband down converters and demodulations are equal" is not enabling. Appropriate action is required.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It states "...two dual-switch may be controlled with only one of the two dual-switch connecting." The term "may be" is not definite. Appropriate action is required.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It states, "...said UWB multiband down converter...includes...four multiband down converters..." It is unclear as how one down converter can further have four down converters. Appropriate action is required.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The statement, "...four multiband down converters and demodulations are equal," is unclear and incomprehensible. Appropriate action is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 19, 20, 21, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Souisse et al. (2002/0102987) in view of Medvedev et al. (6,862,271).

Souisse et al. show a method for distributed data transfer over multiple independent wireless networks comprising the following features.

Regarding claim 1, Souisse et al. show a MIMO-based dual–mode 3G W-CDMA and UWB (Page 3, paragraph 0033) filtering and multicarrier RF section (Fig. 9,

920 showing multiple input and output which comprises multiple carriers/signals/frequencies; Page 1, paragraph 0009; Fig. 2 shows parallel multimode operation of a RF modem device/RF section, Page 3, paragraph 0033); a 3G W-CDMA baseband processor (Fig. 9, box 915, BB processor 1; Page 5, paragraph 0052, where each fragment received is processed according to selected physical layer specification; Fig. 6, Fig. 7; Page 3, paragraph 0033); and a UWB OFDM multiband baseband processor (Fig. 9, box 915, BB processor 2; Page 5, paragraph 0052, where each fragment received is processed according to selected physical layer specification (OFDM, CDMA, GSM); Page 3, paragraph 0033).

However, Souisse et al. do not show a 3G W-CDMA and UWB OFDM multiband control processor and a multiple antenna unit.

Medvedev et al. show a 3G W-CDMA and UWB OFDM multiband control processor (Fig.3, unit 330 and 370; Col. 21, lines 48-67; Col. 22, lines 1-7) and a multiple antenna unit (Col. 1, lines 25-41; Col. 3, lines 54-67; Col. 4, lines 1-4).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. to include multiple antenna to increase diversity and improve performance and a control processor to control various data processors/processing.

Regarding claim 19, Souisse et al. do not show a 3G W-CDMA and UWB OFDM multiband control processor.

Medvedev et al. show a 3G W-CDMA and UWB OFDM multiband control processor as a microcontroller (Fig.3, unit 330 and 370 - controllers; Col. 21, lines 48-67; Col. 22, lines 1-7). Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. to include a control processor to control various data processors/processing.

Regarding claim 20, Souisse et al. do not show a communication receiver wherein said multiple antenna unit includes two independent and identification antennas.

However, Medvedev et al. show a communication receiver wherein said multiple antenna unit includes two independent and identification antennas (Col. 1, lines 25-41; Col. 3, lines 54-67; Col. 4, lines 1-4; Fig. 3, units 324a and 324t).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. to include multiple antennas to increase diversity and improve performance.

Regarding claim 21, Souisse et al. show a dual-mode communication receiver of 3G W-CDMA and UWB communication portable station (Fig. 5, unit 510) comprising a MIMO-based dual-mode 3GW-CDMA and UWB (Page 3, paragraph 0033) filtering and multicarrier RF section (Fig. 9, 920 showing multiple input and output which

comprises multiple carriers/signals/frequencies; Page 1, paragraph 0009; Fig. 2 shows parallel multimode operation of a RF modem device/RF section, Page 3, paragraph 0033), a 3G W-CDMA baseband processor (Fig. 9, box 915, BB processor 1; Page 5, paragraph 0052, where each fragment received is processed according to selected physical layer specification (OFDM, CDMA, GSM); Fig. 6, Fig. 7; Page 3, paragraph 0033), and an UWB OFDM multiband baseband processor (Fig. 9, box 915, BB processor 2; Page 5, paragraph 0052, where each fragment received is processed according to selected physical layer specification (OFDM, CDMA, GSM); Page 3, paragraph 0033).

However, Souisse et al. do not show portable station comprising two antennas, a 3G W-CDMA and UWB OFDM multiband control processor, and a sharing memory bank.

Medvedev et al. show a portable station comprising two antennas (Fig. 3, units 324a and 324t), a 3G W-CDMA and UWB OFDM multiband control processor (Fig.3, unit 330 and 370 - controllers; Col. 21, lines 48-67; Col. 22, lines 1-7), and a sharing memory bank (Fig. 3, unit 332).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. to include a control processor to control various data processors/processing.

Regarding claim 23, Souisse et al. do not show communication receiver of 3G W-CDMA and UWB communication portable station of claim 21 wherein said 3G W-CDMA and UWB OFDM multiband control processor controls data flow exchanging in the receiver.

Medvedev et al. show a communication receiver (Fig. 3, unit 354a) comprising wherein said 3G W-CDMA and UWB OFDM multiband control processor (Fig. 3, unit 330) controls data flow exchanging in the receiver (Fig.3, unit 330 and 370 - controllers; Col. 21, lines 48-67; Col. 22, lines 1-7).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. to include a control processor to control various data processors/processing.

Regarding claim 24, Souisse et al. show a system comprising a multiband MIMO-based 3G W-CDMA and UWB communications (Fig. 2; Fig. 5; Fig. 9; Page 3, paragraph 0033) including: P-user 3G and UWB portable stations (Fig. 2 and Fig. 5, unit 510; Page 1, paragraph 0004 – many users); a MIMO-based 3G W-CDMA base station (Fig. 6, unit 610; Page 3, paragraph 0033) coupled to 3G W-CDMA network interface section (Fig. 2 and Fig. 6); a MIMO-based UWB base station coupled to UWB network interface section (Page 1, paragraph 0004 – interpreted as an OFDM technique will be based upon a OFDM base station, just like CDMA technique used with CDMA base station mentioned in paragraph 0004).

However, Souisse et al. do not show a system comprising a MIMO channel.

Medvedev et al. show a system (Col. 1, line 14) comprising a MIMO channel (Col. 1, lines 31-32). Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. to increase diversity and improve performance.

Regarding claim 25; Souisse et al. show a system (Fig. 5, system 500) wherein the 3G and UWB portable station (Fig. 2; Fig. 5 – unit 510) comprising a multiband MIMO-based dual-mode transceiver of 3G W-CDMA and UWB communication (Fig. 2 and Fig. 5).

8. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Souisse et al. (2002/0102987) in view of Medvedev et al. (6,862,271), as applied to claim 1 above, and further in view of Feher (6,470,055).

Souisse et al. and Medvedev et al. show the claimed limitations as discusses in paragraph 7 above. Souisse et al. and Medvedev et al. do now show the following features: RF section that includes two-LNA, two-AGC, two analog bandpass filters, two dual-switch, a 3G W-CDMA down converter and demodulation, an UWB multiband down converter and demodulation, and a A/D unit.

Feher discloses a spectrally efficient FQPSK, FGMSK, and FQAM for enhanced performance CDMA, TDMA, GSM, OFDM (UWB) systems.

Regarding claim 2, Feher shows RF section that includes two-LNA (Fig. 1A, box 116), two-AGC (Fig. 30, box 30.3; Col. 35, lines 51-60), two analog bandpass filters (Fig. 7, box 7.9 and 7.12; Fig. 1A, box 115), two dual-switch (Fig. 1A, unit 113; Fig. 2, unit 2.14 and 2.15; Col. 15, lines 8-11), a 3G W-CDMA down converter and demodulation (Fig. 37, box 37.3; Col. 13, lines 28-34 show CDMA, WCDMA and OFDM signals being sent and received), an UWB multiband down converter and demodulation (Fig. 37, box 37.5; Col. 13, lines 28-34 show CDMA, WCDMA and OFDM signals being sent and received), and a A/D unit (Fig. 31, box 31.3).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. and Medvedev et al. to include all these components to be able to switch between proper modes of operation and standards whether being WCDMA or OFDM depending on the received signal.

9. Claims 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Souisse et al. (2002/0102987) in view of Medvedev et al. (6,862,271) as applied to claim 1 above, and further in view of Feher (6,470,055) as applied to claim 2 above, and further in view of Hasler (6,351,236).

Souisse et al., Medvedev et al., and Feher show the claimed limitations as discussed in paragraphs 7 and 8 respectively above. However, Souisse et al., Medvedev et al., and Feher do not show the following features: **regarding claim 3**, a receiver wherein two dual-switch are to provide information from the analog bandpass

filters either to the 3G W-CDMA down converter and demodulation or to the UWB multiband down converter and demodulation.

Regarding claim 3, Hasler shows a mobile transceiver comprising a receiver wherein two dual-switch (Fig. 3, unit 18; Col. 4, lines 54-57) are to provide information from the analog bandpass filters (Fig. 3, unit 8 and 14) either to the 3G W-CDMA down converter and demodulation (Fig. 3, unit 9; Col. 4, lines 54-57) or to the UWB multiband down converter and demodulation (Fig. 3, unit 17 that shows a GPS down converter instead of UWB down converter, but the functionality is the same of switching between 2 down converters; Col. 4, lines 54-57).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al., Medvedev et al. and Feher to switch between two different modes (WCDMA and OFDM) as needed and thus be able to use multiple types of mode on the same device.

Regarding claim 5, Souisse et al. and Medvedev et al. show the claimed limitations as discussed in paragraph 8 above. However, Souisse et al. and Medvedev et al. do not show the following features: a 3G W-CDMA down converter and demodulation including a 3G W-CDMA sum over a block duration, two multicarriers, and two channel select filters.

Feher shows a 3G W-CDMA down converter and demodulation including a 3G W-CDMA sum over a block duration (Fig. 37, box 37.3, box 37.5, and box 37.6 –

combiner/adder/summation) and two multicarriers (Fig. 37, signals/carriers flowing from 37.3 (W-CDMA) and 37.5 (OFDM) respectively to the combine 37.6).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. and Medvedev et al. to be able to use plurality of modes (WCDMA and OFDM) within a mobile device.

However, Feher does not show channel select filters.

Hasler show a down converter coupled to channel select filters (Fig. 2, unit 10).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al., Medvedev et al. and Feher to switch between two different modes (WCDMA and OFDM) as needed and thus be able to use multiple types of mode on the same device.

Regarding claim 6, Souisse et al. and Medvedev et al. show the claimed limitations as discussed in paragraphs 7 and 8 above. However, Souisse et al. and Medvedev et al. do not show the following features: wherein said 3G W-CDMA down converter and demodulation is a QPSK demodulation.

Feher shows said 3G W-CDMA down converter and demodulation is a QPSK demodulation (Fig. 1A, unit 103; Col. 1, lines 65-67; Col. 2, lines 1-5; Fig. 37, unit 37.3 (down converter)).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. and Medvedev et al. to be

able to send higher amount of data, thus increase the throughput by using QPSK as the modulation technique.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Souisse et al. (2002/0102987) in view of Medvedev et al. (6,862,271) as applied to claim 1 above, and further in view of Feher (6,470,055) as applied to claim 2 above, and further in view of Maeda (6,195,400).

Regarding claim 9, Souisse et al., Medvedev et al., and Feher show the claimed limitations as discussed in paragraphs 7 and 8 respectively above. However, Souisse et al., Medvedev et al., and Feher do not show the following features: wherein said A/D unit has two switches and eight A/D converters.

However, Maeda shows a portable station wherein said A/D unit (Fig. 10, unit 29) has two switches (Fig. 10, unit 29C showing one switch) and eight A/D converters (Fig. 10, unit 29D showing one A/D converter). Maeda does not show specifically two switches and eight A/D converters being part of one A/D unit, which are mere duplicate parts. In regards to this, MPEP 2144.04 shows:

VI. REVERSAL, DUPLICATION, OR REAR-RANGEMENT OF PARTS

B. Duplication of Parts

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web"

which lies ** in the joint, and a plurality of "ribs" ** >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, **the court held that mere duplication of parts** has no patentable significance unless a new and unexpected result is produced.)

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al., Medvedev et al. and Feher to increase performance of the device.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Souisse et al. (2002/0102987) in view of Medvedev et al. (6,862,271) as applied to claim 1 above, and further in view of Abrishamkar (2001/0044313) and Kotzin (7,146,189).

Regarding claim 14, Souisse et al., Medvedev et al., and Feher show the claimed limitations as discussed in paragraphs 7 and 8 respectively above. However, Souisse et al., Medvedev et al., and Feher do not show the following features: a receiver wherein said 3G W-CDMA baseband processor comprises two digital filters, two down samplings, a MUX, and a multiband rake receiver and decoder unit.

Abrishamkar shows a receiver wherein said 3G W-CDMA baseband processor comprises two digital filters (Fig. 2, unit 68, pilot estimator is a filter; Page 3, paragraph 0034), two down samplings (Page 3, paragraph 0038; Fig. 2, unit 58), a MUX (Fig. 2, unit 72 – demodulator/multiplexer), and decoder unit (Fig. 2, unit 74). Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al. and Medvedev et al. to properly process the incoming signals.

Kotzin shows a baseband processor (Fig. 1, unit 110) comprising a rake receiver (Col. 2, lines 13-20). Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify the apparatus of Souisse et al., Medvedev et al. and Abrishamkar to include a rake receiver to combine together the signals that arrive in the receivers with different time delays to make the signal stronger.

Allowable Subject Matter

12. Claims 10-13, 15-18, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

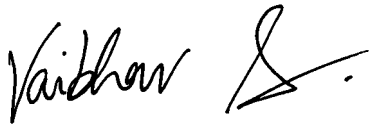
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any inquiry concerning this communication or earlier

communications from the examiner should be directed to VAIBHAV (MANU) SAWHNEY whose telephone number is 571-272-9738. The examiner can normally be reached on Monday - Friday 1000 - 1930 EST, alternating. Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG B. YAO can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



VAIBHAV (MANU) SAWHNEY